## REMARKS

Claims 1-16 are pending. The specification and claims are amended. A marked-up version showing the changes made to the specification and claims by the present amendment is attached hereto as "**Version with markings to show changes made**."

Claims 8 and 10 were rejected under 35 USC § 112, second paragraph, as being indefinite. Claims 8 and 10 have been amended to correct the informalities noted by the Examiner. It is believed that the amended claims are in full compliance with 35 USC § 112.

Claims 1-9 were rejected under 35 USC § 103(a) as being unpatentable over ***Chen et al.*** or ***Shiotani et al.*** Favorable reconsideration of this rejection is earnestly solicited.

As noted by the Examiner, ***Chen et al.*** teaches applying a metal layer to a polyamide layer. More specifically, ***Chen et al.*** teaches laminating a metal foil.

However, ***Chen et al.*** fails to teach or suggest forming at least one conductor layer directly on at least one of the thermoplastic polyamide surfaces. Such is quite different from ***Chen et al.***

In a method for laminating a metal foil, either a method that a metal foil and plastic film are adhered by cement, or that a metal foil or a plastic film are heat-fused while using a film which can be heat-fused.

Such is in contrast to the present invention. For example, in forming the conductor layer directly on the polyimide surface, a method for adhering a metal directly onto a film can be used, such as a wet plating method. Other methods include a method that metal particles which have been formed by

vaporizing in a vacuum are adhered onto the surface of a film, which is called a dry plating method. Then, a metal is laminated by a wet plating method.

In the prior art, heat-fusing by heating under pressure is required to laminate two different sheets. For example, ***Chen et al.*** teaches that gas which is trapped in polyimide prevents adhesion strength from being improved. As such, ***Chen et al.*** laminates a metal sheet through a thermoplastic polyimide, and then a conductor layer is formed. As such, it is necessary to once melt a thermoplastic polyimide by heating and adhering a polyimide and a metal sheet under pressure. Two further steps are disclosed by ***Chen et al.*** to further improve adhesion strength.

More specifically, the first step is to apply a first pressure which is sufficiently low to the sheet of metal and a polyimide substrate composite to permit outgassing of any gas trapped or generated within the polyimide, and to increase the temperature. The second step increases the pressure to a second pressure value and heats to a temperature which is above the Tg of the thermoplastic polyimide to complete lamination of the metal to the polyimide. Accordingly, adhesion strength is improved by outgassing of gas under a first pressure as described by ***Chen et al.*** Therefore, it is understood that the common method of laminating a polyimide and a metal sheet does not have a sufficient effect in adhesion strength.

As noted above, the claimed invention is distinguished from the cited art in that a conductive layer is formed directly onto a polyimide. When a conductive layer is formed directly, a metal and a thermoplastic polyimide are adhered by a chemical bond. As such, a conductive layer and a plastic film are adhered sufficiently without heating and pressurizing. Neithertheless, adhesion strength is dramatically improved by further heating and pressurizing.

***Shiotani et al.,*** like ***Chen et al.***, is directed to laminating of a metal foil. ***Shiotani et al.*** improves bond strength of polyimide having a specific structure. Thus, like ***Chen et al.***, ***Shiotani et al.*** fails to teach or suggest the claimed invention. Claims 10-13 were rejected under 35 USC § 103(a) as being unpatentable over ***Chen et al.*** or ***Shiotani et al.*** It appears that the Examiner intended to further apply the teachings of ***Ameen et al.*** based on the comments made by the Examiner in the rejection. Favorable reconsideration of this rejection is earnestly solicited.

The deficiencies of ***Chen et al.*** and ***Shiotani et al.*** are discussed above. ***Ameen et al.*** is directed to electrodeposition of metal.

The present invention has the characteristics that laminates, which already have sufficient adhesion strength without heating and pressurizing, are heated and pressurized. By this step, adhesion strength can be improved extremely. Such is apparent from the Examples of the present specification.

The specification has been amended to change Comparative Example 4 to read Example 3a since this Example corresponds to the present invention.

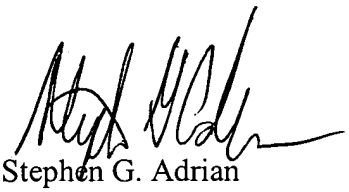
For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully Submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



Stephen G. Adrian
Attorney for Applicants
Reg. No. 32,878

SGA/arf
Atty. Docket No. **010129**
Suite 1000,1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930

23850
PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made
Petition for Extension of Time

**VERSION WITH MARKINGS TO SHOW CHANGES MADE 09/782,169**

**IN THE SPECIFICATION**:

Please amend the specification as follows:

Paragraph beginning at page 24, line 1 has been amended as follows:

[Table 3]

| | Heating temp. (°C) | Peel strength (N/cm) |
|---|---|---|
| Ex. 3 | 100 | 4.1 |
| | 150 | 1.5 |
| | 180 | 5.2 |
| | 200 | 5.6 |
| | 250 | 5.3 |
| | 300 | 4.4 |
| Comp. Ex. 3 | no | 1.2 |
| [Comp] Ex. [4] 3a | no pressurizing 150°C | 3.0 |

**VERSION WITH MARKINGS TO SHOW CHANGES MADE 09/782,169**

Paragraph beginning at page 26, line 6 below Table 4 has been amended as follows:

[Comparative] Example [4] 3a

**IN THE CLAIMS**:

Claims 8 and 10 have been amended as follows:

8. (Amended) The process according to any one of claims 1 to 3, wherein said heating step is carried out under [the pressurized condition] pressure.

10. (Amended) The process according to any one of claims 1 to 3, wherein said conductor layer is formed by a dry plating method.